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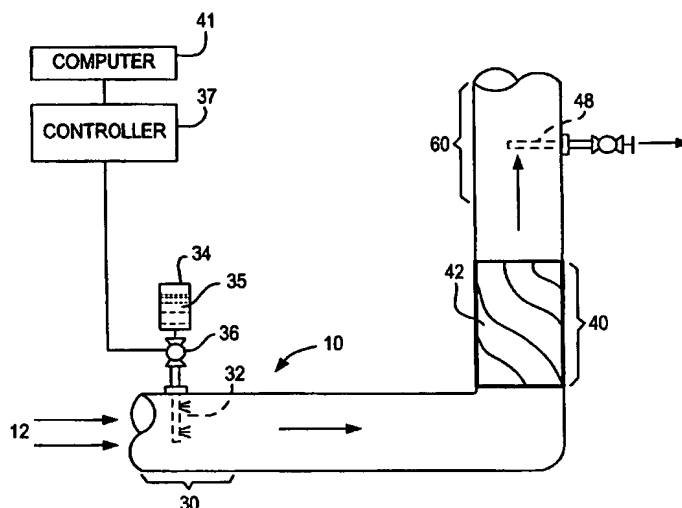
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[Continued on next page]

(54) Title: MULTI-PHASE FLUID SAMPLING METHOD AND APPARATUS



(57) Abstract: The invention provides a method for producing a homogenous sample of a pressurized fluid stream flowing in a pipeline, the fluid stream consisting of a majority component of hydrocarbon gas, the remainder consisting of one or more hydrocarbon liquids and water in the form of vapor, aerosols, droplets and/or liquid streams, the method includes the steps of: a. injecting one or more surface active agents into the fluid stream in an injection zone at a rate that is sufficient to form a uniform foam of the gas and the one or more hydrocarbon liquids and water components; b. mixing the one or more surface active agents with the fluid stream in a mixing zone to form a uniform foam composition flowing in the pipeline downstream of the mixing zone; c. withdrawing a portion of the foam composition from the pipeline at a sampling point; d. passing the portion of the foam composition withdrawn through a sampling loop; and e. removing a sample of predetermined volume of the foam composition from the sampling loop for analysis.



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US CL : 436/180

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 436/180

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
436/25, 174, 176

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,190,103 A (GRISTON et al) 02 March 1993 (01.03.1993), column 2, line 65 - column 3, line 3; column 3, lines 55-68; column 4, lines 22-26.	16, 17, 19, 21, 22, 24

Y		1-15, 18, 20, 23, 25-32
Y	US 5,597,950 A (MULLEN) 22 January, 1997 (28.01.1997), column 2, line 57 - column 3, line 10; column 3, lines 51-64.	1-32

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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